LESSON **4.3**

NAME ______________________________ DATE __________

Practice B

For use with pages 212–219

T3

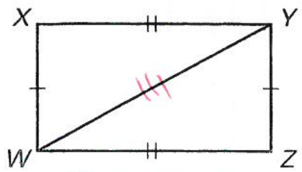
For each triangle, name the included angle between the pair of sides given.

(5)

1. $\triangle MAT$: $\overline{MT}$ and $\overline{TA}$ ∡T
2. $\triangle CDA$: $\overline{CA}$ and $\overline{DC}$ ∡C
3. $\triangle PSC$: $\overline{CS}$ and $\overline{PS}$ ∡S
4. $\triangle WDG$: $\overline{DG}$ and $\overline{GW}$ ∡G

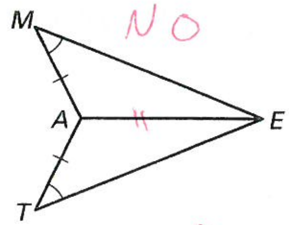
Decide whether enough information is given to prove that the triangles are congruent. If there is enough information, state the congruence postulate you would use.

5. $\triangle XYW$, $\triangle ZWY$ (2)



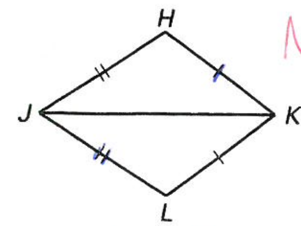
Yes, SSS

6. $\triangle MAE$, $\triangle TAE$ (1)



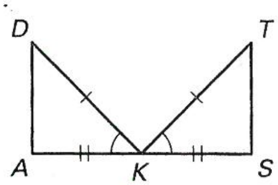
NO

7. $\triangle KHJ$, $\triangle JLK$ (1)



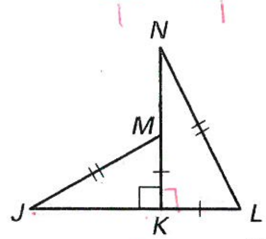
NO

8. $\triangle DKA$, $\triangle TKS$ (2)



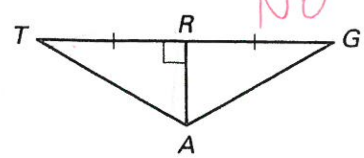
Yes, SAS

9. $\triangle JKM$, $\triangle NKL$ (1)



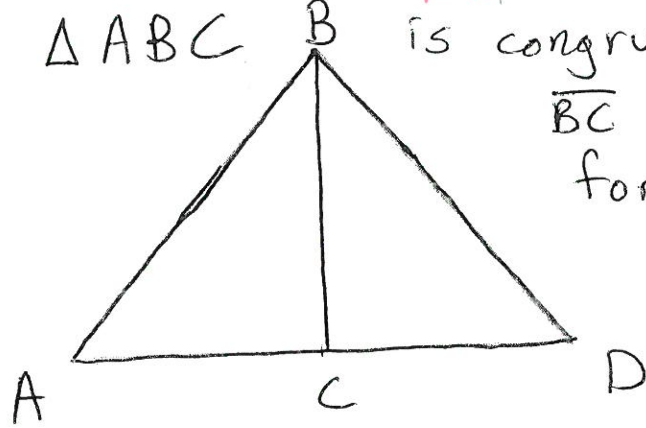
NO, SSA

10. $\triangle TRA$, $\triangle ARG$ (1)



NO

11. Prove $\triangle ABC$ is congruent to $\triangle DBC$ if $\overline{BC}$ is a perpendicular bisector for $\overline{AD}$.



Statement	Reason
$\overline{BC}$ is a ⊥ bis. for $\overline{AD}$	Given
$\overline{BC} \cong \overline{BC}$	Reflexive Prop.
$AB = BD$	⊥ Bis. Thm
$\overline{AB} \cong \overline{BD}$	def. of ≅
$AC = CD$	⊥ Bis. Thm
$\overline{AC} \cong \overline{CD}$	def. of ≅
$\triangle ABC \cong \triangle DBC$	SSS ≅ Post.

Name

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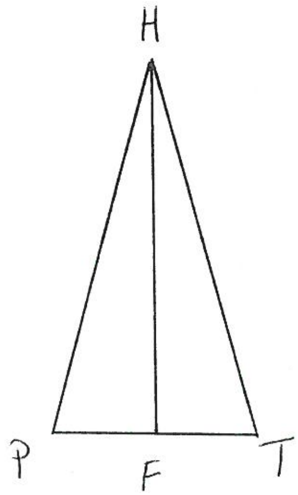
$\overline{HF}$ is the perpendicular bisector of $\overline{PT}$



Do two different proofs to show $\triangle HPF \cong \triangle HTF$. One proof must use SSS and the other must use SAS.

Statement	Reason
$\overline{HF}$ is the $\perp$ bis. of $\overline{PT}$	given
$\overline{PF} \cong \overline{FT}$	def. of $\perp$ bis.
$HP = HT$	$\perp$ Bis. Thm
$\overline{HP} \cong \overline{HT}$	def. of $\cong$
$\overline{HF} \cong \overline{HF}$	reflexive prop.
$\triangle HPF \cong \triangle HTF$	SSS

Statement	Reason
$\overline{HF}$ is the $\perp$ bis. of $\overline{PT}$	given
$\overline{HF} \cong \overline{HF}$	reflexive prop.
$\measuredangle HFP$ and $\measuredangle HFT$ are right angles	def. of $\perp$ bis.
$\measuredangle HFP \cong \measuredangle HFT$	right angle $\cong$ Thm
$\overline{PF} \cong \overline{FT}$	def. of $\perp$ bis.
$\triangle HPF \cong \triangle HPT$	SAS

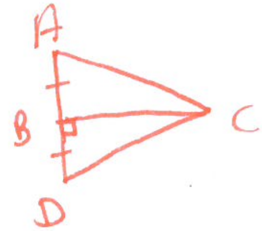
* could show also:

$HP = HT$	$\perp$ Bis. thm
$\overline{HP} \cong \overline{HT}$	def. of $\cong$
$\measuredangle HPT \cong \measuredangle HTP$	Base Angles Thm

Statement	Reason
$\overline{HF}$ is the $\perp$ bis. of $\overline{PT}$	given
$HP = HT$	$\perp$ bis. Thm
$\overline{HP} \cong \overline{HT}$	def. of $\cong$
$\measuredangle HPT \cong \measuredangle HTP$	Base Angles Thm
$\measuredangle HFP$ and $\measuredangle HFT$ are right $\measuredangle$s	def. of $\perp$ bis.
$\measuredangle HFP \cong \measuredangle HFT$	Right Angle $\cong$ Thm
$\triangle HPF \cong \triangle HTF$	AAS

* could also show:

$\overline{HF} \cong \overline{HF}$	reflexive Prop.

Given 

Prove
$\triangle ABC \cong \triangle DBC$

Statement	Reason
$\overline{AB} \cong \overline{BD}$	Given
$\measuredangle CBD$ is a right angle	Given
$\overline{CB} \perp \overline{AD}$	def of $\perp$
$\measuredangle ABC$ is a right angle	If two lines are $\perp$, then they form 4 right angles
$\measuredangle ABC \cong \measuredangle DBC$	Right Angle Congruence Thm
$\overline{BC} \cong \overline{BC}$	Reflexive Property
$\triangle ABC \cong \triangle DBC$	SAS $\cong$ Post.

Alternative Steps

$\overline{CB}$ is the $\perp$ bis. for $\overline{AD}$	def. of $\perp$ bis
$AC = DC$	$\perp$ Bis. thm
$\overline{AC} \cong \overline{DC}$	def. of $\cong$
$\measuredangle CAB \cong \measuredangle CDB$	Base $\measuredangle$s Thm